COMMERCIAL GARDENING AND WELLS

Final Report

for the period

30 September 1997 – 30 June 2003

Save the Children

CA No. 624-A-00-97-00067-00

Table of Contents

List of Acronyms

APCAM	Assemblée Permanente des Chambres d'Agriculture du Mali
APROFA	Agence pour la Promotion des Filières Agricoles
ATI / EW	Appropriate Technology International / EnterpriseWorks
FASO JIGI	Mutualist Credit Institution
GVM	Groupement Villageois de Maraîchage
IER	Institut d'Economie Rurale
JIGIYA	Well digging Cooperative
KAFO JIGINEW	Mutualist Credit Institution
OC	Organisation Communautaire
ONG	Organisation Non Gouvernementale
SC	Save the Children
SENASIGI	Gardening Cooperative
SERNES	Services d'Experts pour les Ressources Naturelles et l'Environnement au Sahel
SLACAER	Service Local d'Appui Conseil d'Aménagement et de l'Equipement Rural
SLRC	Service Local de la Réglementation et Contrôle
USAID	United States Agency for International Development
WI	Winrock International

I. Introduction

Working with a marginalized rural population in the region with the highest incidence of malnutrition in Mali, the establishment of market gardens has been not only a means of generating revenue (primarily for women) but also an obvious strategy for improving the nutritional status of these populations. Included in the original strategy of this project was the objective of developing external markets, and developing the capacity for food preservation. Until now, however, the vegetables produced have been nearly entirely sold and consumed locally. Of the 220 gardens created during the life of the project, 219 are currently under cultivation[1]. The following are some key results from the last six months of the project:

- The *production of 1,489.2 tons of vegetables, valued at 461,652,000* F CFA; the highest amounts so far were obtained this past semester due to the production of high-value and –weight crops such as green beans, potatoes, and *Yiriwa Jaba*, as opposed to the production of amaranth, green onions, and light and perishable crops. Improved production techniques also contributed to this result.
- An increase in average production per garden from 5.2 to 6.8 tons.
- Training of 460 management committee members.
- Organization of two market fairs.
- Organization of two producers' workshops, with 230 farmers participating.
- Regular support given to all 9,043 participants throughout the semester.
- Digging and re-digging of 152 wells including: The transfer of 39 wells which were initially dug on rocky sites, or sites with insufficient water; the repair of 8 wells due to unstable ground; and the deepening of 105 wells by 3 meters each to a total depth of 12 meters because of a lowering of the water table.
- An increase in the loan recovery rate to 87%.
- The training of 1,344 producers by management committee members on techniques such as seed bed preparation, establishing nurseries, and grafting for new gardens, and production techniques for potatoes, *Yiriwa Jaba* and green beans for established gardens.
- Senasigi and Jigiya each convened their regularly scheduled quarterly meetings this past semester. Jigiya-Bougouni's board of directors was changed and increased from 15 to 22 members.

[1] The two wells in the garden in Sélé could not be further deepened due to hitting bedrock. Also, four gardens were transferred to other sites due to internal village organizational problems.

II. Indicator Results Tables

The results obtained during this period are presented in the following indicator tables and are followed by comments as appropriate.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
1. Number of (new) gardens established	0	8	14	22	26	58	123	59	59	38	38	0	4	3 in Bafaga and 1 in N'téna to replace those in Fangouan, Dembasso, Fogoba and Tousséguéla
Number of (old) gardens renovated	14[2]	12	12	0	0	0	0	0	0	0	0			
Total gardens (cumulative)	14	20	40	42	66		123	182	182	220	220	220	220	
2. Number of gardens cultivated (operational):														Sélé garden not productive due to the presence of bedrock.
New:	0	0	0	14	22 +14[4]	0	57	59	57	38	36	4	3	Three other gardens that were unproductive in
Old:	14[3]	12	6	6	6	66	65	65	122	182	180	216	216	2002 are now productive after having been transferred. (Fangouan,
Total cultivated (cumulative)	14	12	20	32	62	66	122	124	179	220	216	220	219	Dembasso and Fogoba were transferred to Bafaga and Tousséguéla to N'tena.) Organizational problems in Djegenina were resolved.

[2] There were 26 abandoned gardens to be renovated. 14 were renovated and made operational during 1997 after the baseline.
[3] See above. These 14 renovated gardens were in production in 1997.
[4] The number of new gardens established in 1998.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
3. Number of garden management committee members trained by SC in either improved gardening or management techniques:	179	340	290 (179+111)	190	195	130	225	290	378	290	440	190	20	The refresher training for 190 members of 38 gardens created in 2002 could not be held; 20 members of 4 new gardens established received training in garden establishment techniques.
Women:	89	204	146	142	107	78	125	174	227	193	225	114	17	
Men:	90	136	144	48	88	52	102	116	151	97	215	76	3	
4. Number of active cultivators:	600	1300	1144 (600+544)	1700	1894	2640	5059	3939	7307	2320	8839	8839	9043	9043 represents the cumulative number of producers in 219 gardens, 82 % women.
Women:		780	687	1020	1744	1584	3937	2363	5846	1392	7159	7159	7361	In the new gardens:
Men:		520	457	680	150	1056	1122	1576	1461	928	1680	1680	1682	Bafaga 144 (143 women), N'tena 60 (59 women)

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
5. Number of cultivators trained by committees in *improved gardening techniques* (includes those planting for the first time.)	0	960	990	1920	2293	1040	1450	1740	2373	1740	3872	1140	1344	(80% women). Trainings in seed bed preparation, nurseries, etc. Bafaga: 144 producers ; N'tena 60 producers
Women:		-	-	1152	1376	624	1160	1044	1495	1044	2864	684	1075	
Men:		-	-	768	917	416	290	696	878	696	1008	456	269	
6. Total vegetable production (in tons)[5]	28	153	79	216	249	264	347	620	893	956	1204	1650	1489.2	Poor rains caused early drying up in 105 wells at a key moment in production.
7. Average annual production/garden in tons (Note: Figures for 2000 are for the semester only)[6]	2	5.9	3.9	6.35	5.74	4	5.15	5	6.74	5.25	5.57	7.5	6.8	Idem 6

[5] Indicators 6-17 were calculated based on figures collected from a sample of five people per garden, an approach suggested by USAID.
[6] Indicator 7 is calculated by using annual production figures for gardens that were cultivated year round, and projected annual figures for gardens that were cultivated for less than a year. For 2000, however, the figure noted is an average production estimate for six months only instead of for a year.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
8.Value of total production in FCFA (m = million)	10m	29.8m	15m	42m	44.7m	50m	66.7m	142.6m	146.5m	209.3m	252.8m	245.4m	461.7m	Producers obtained an average price of 310 FCFA/kg, an increase from last year, due to better organization by producers at markets and to the production of higher value crops.
9. Value of vegetables sold in FCFA (m = million)	1.2m	26.8m	10m	33.5m	33.6m	38.7m	44.5m	95.1m	89.4m	159.5m	160m	147.3m	323.2m	70% of total production was sold at an average price of 310 FCFA/kg, versus 63.28% at 210 FCFA/kg in 2002
10. Quantity of vegetables preserved (tons)	0	15	0	43	0	44	0.35	61	3.39	88	5.71	55	11	0.74% is saved as seeds. USAID asked us to put more emphasis on preservation; a target of 250kg per garden was set, but only 50kg per garden was achieved as farmers were eager to sell their produce at this year's good prices.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
11. Value of vegetables preserved in cfa (m = million)	0	2.9m	0	8.4m	0	9.7m	0.38m	23.8m	0.64m	34.9m	1.2m	7.0m	3.4m	A lot of onion seed was saved, however higher prices prompted most farmers to sell as much as possible.
12. Number of garden wells dug/renovated	26	52	54	44	52	52	117	116	124	76	114	39	152	152 as follows : 39 transferred ; 8 rehabilitated ; 105 deepened.
13. Quantity of vegetables sold (tons) (Not included in original project considerations)	-	-	49	144	132.5	176	231.1	413.3	544.8	637	761.9	450	1042.4	70% of production.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
14. Average value of vegetables produced/garden in 1000 FCFA	714	-	750	875	840.6	875	991.8	1,150	1,125.6	1,150	1,170	1,160	1,475	Idem nº8
15. Average annual garden revenue per cultivator in FCFA	16,000	-	14,000	24,700	13,625	21,875	22,535	24,010	28,140	24,010	29,260	31,875	35,735	Idem nº8
16. Quantity of vegetables consumed by cultivators (tons)	-	-	30	-	116	44	115.1	103.3	290.3	159.3	436	275	435	29% of production ; consumption of vegetables is becoming more and more of a habit.

Indicators	Baseline	1998		1999		2000		2001		2002		2003		Comments
	1997	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach	Exp	Ach (Jan June 03)	
17. Value of vegetables consumed in FCFA (m=million)	-	-	5	-	18.2	0	21.9	23.8	46.9	34.9	91.6	40.9	135.1	
18. Number of well digger/mason teams created	26	-	40	114	84	26	53	58	43	38	36	0	4	3 in Bafaga and 1 in N'tena
19. Number of well diggers/masons trained	104	-	160	56	194	100	213	232	200	152	345 (147+198)	0	16	12 people in Bafaga and 4 in N'tena
20. New Markets and buyers identified												3	7	Sido, Bougouni, Faradjélé, Kologo, Bladié, Kolosso and Kadiana

NB: The gardens created in one year are cultivated the next year. Thus the gardens created in 2001 were harvested in 2002, the gardens created in 2002 will be harvested in 2003, etc.

III. Comments on Results Achieved

Although production increased from 1,204 to 1,489 tons, targets were not achieved due to poor rains this past season which negatively affected the water table of a number of wells. Increases from last year are explained by:

- Increase in hectares under cultivation;
- Better mastery of production techniques as a result of trainings;
- Introduction of more productive varieties;
- Organization of seed production by producers; and
- Closer conformity to the agricultural calendar.

The total value of production this semester was 461,652,000 FCFA versus a target of 245,453,000. Factors contributing to this positive result include:

- Introduction of high value crops such as potatoes, green beans and *Yiriwa Jaba*;
- Organization of producers for selling (to avoid market gluts and maximize distribution);
- Impact of the Ivory Coast crisis which caused a delay in the arrival of seeds and produce, decreasing competition in the program's market zones (…and creating a situation where the demand is greater than the supply); and
- New market due to the Ivoirian refugees—which has particularly been beneficial to the gardens around the Faragouaran camp and for the gardens in Fakola and Kadiana which serve the markets in Tingrela and Gueya in the Ivory Coast.

Seventy percent of production was sold, that is, 1,042 tons versus a target of 450 tons. This was a result of high prices combined with the commitment of producers to pay off their loans in a timely way.[7] Eleven tons of vegetables were preserved, mostly seed onions, which was more than three times what was preserved during the same period in 2002.

IV. Impact/Success Stories

The following are individual stories of how this program has positively impacted lives:

Rokia Konaté, a producer from M'pièdiana, is a married mother of one child, a 10-year old boy who attends 5th grade at the village school. She also cares for the two teenage children of her brother-in-law, whose mother died a few years ago. For the last three years, Mme. Konaté has used revenue from the sales of her produce to provide for the basic needs, school fees, and school supplies for all three children. In addition, she was able to contribute 120,000 FCFA towards the trousseau of her eldest niece who was married in Kalakan in April.

[7] There were two garden loan recovery campaigns this past semester, organized by Senasigi in Bougouni and Kolondièba; a total of 2,079,845 FCFA was recovered.

Salif Sangaré, the administrative secretary of the Bladié-Tièmala producers' group stated: *"After selling my produce at this year's market fair, I was able to contribute 41,000 FCFA to my brother's wedding."*

Maimouna Samaké of Diambala states: *"I was able to earn 35,000 FCFA, and with that I bought my daughter's trousseau."*

These stories are perhaps significant in a way that might not be obvious on first glance: a recent study on child labor migration from the Sikasso and Dogon regions showed conclusively that the most important reason girls decide to leave their homes to find work in the Ivory Coast or elsewhere is to earn enough money to pay for their trousseaux. The social status which boys acquire after returning from migration is also a key motivating factor. As conditions in the Ivory Coast are often very difficult, if not downright dangerous, the fact that their parents and relatives are able to contribute to their children's needs may be a factor in deterring or stemming this flow. Indeed, ***Tènè Mariko***, treasurer for Senasigi Bougouni earned 41,325 from sales at the Bougouni market fair, and with this sum was able to finance her son's engagement. She declares that without her contribution, her son would have definitely had to leave Mali to work in the Ivory Coast.

Gender and community relations seem also to be positively affected in program zones. For example, ***Tènè Mariko*** from Bladiè Tiemala, treasurer of Senasigi Bougouni, helped her husband meet family needs by paying 25,000 FCFA for rice. ***Klé Kadiatou Diakité*** and ***Toula Kadiatou Diakité***, co-wives of Oumar Koné, are both gardeners from Diambala and they contributed 13,000 FCFA for the treatment of Mr. Koné's daughter-in-law. ***Sèbè Sangaré***, president of the Bladiè Tiemala group states that: *"We have introduced a donation system for each community event, at which each member of the group contributes 100 FCFA. In this way, our group contributed 3,400 FCFA to our colleague Salif Sangaré on the occasion of his wedding, along with two baskets of vegetables."* ***Kassim Samaké***, the secretary of the Gonzana producers'group broke his ankle while digging a well; the well-diggers' cooperative of which he is a member covered his medical costs of 32,000 FCFA. The Kolondieba branch of Senasigi accorded a 75,000 FCFA loan to ***Broulaye Koné*** to cover medical costs of his wife, Naminata, Senasigi's secretary. Very sadly, Mme Koné died soon thereafter.

Many producers state that they are better able to take care of the health needs of their family members because of their gardening revenues and the more varied and nutritious vegetables they produce. ***Sitan Diakité*** of Diambala states that she was able to support medical costs of 14,000 FCFA for her daughter Kadiatou Koné. ***Sèbè Sangaré***, president of the gardening group in Bladiè-Tièmala states: *« My grandson was suffering from malnutrition; his health has improved considerably as I am now able to provide him with fresh vegetables from my garden. »*

Gardening profits have been used by beneficiaries to launch other economic activities as well:

Sitan Samaké of Diambala purchased a ewe for 10,000 FCFA in order to begin a new small livestock raising activity, while ***Djelika Diakité*** bought a goat for the same reason. Addressing GVM requests to expand their gardens' areas under cultivation, villages such as Klé-Sokoro (Bougouni) and Boundioba, Koloni-Boundio, Bougoula (Kolondièba) requested and received additional loans to cover fencing costs from their gardening groups.

Finally, many gardeners state that one of the main uses of gardening revenues is to pay for their children's schools fees. ***Mery Doumbia*** states that she was able to pay for school supplies costing 4,700 FCFA for her three children (who are in 1st , 2nd and 4th grades) and an adopted child in 6th grade. Similarly, ***Salimata Bagayoko*** (of Tora Djinkoura) bought 1,350 FCFA worth of school supplies for her 15 year-old daughter. ***Fatoumata Diakité*** of Niamala bought a hurricane lamp so that her son, who attends high school in Kolondièba, could study at night.

V. Challenges / Lessons Learned

During this last semester, the following challenges were faced and lessons learned:

- A handful of gardening projects had to be stopped. These difficult decisions were based on reasons such as non-repayment of loans, or the non-cultivation of the garden. This was the case in the villages of Tousséguéla, Dembasso and Fangouan. In the case of Fogoba, unfortunately the water table was simply too low : even though the well was deepened to 18 meters, there still was insufficient water.
- Access to seeds was quite constrained during the past season (as noted above, due to limited commerce with Ivory Coast). A positive aspect of this was that it prompted many producers to preserve onion bulbs to store as seeds. This both allowed them to plant according to the agricultural calendar as well as to lower their production costs.
- It was decided this year not to provide per diem for the participants at the market fairs held this past semester. Although disappointment was obvious, and participation lower than in previous years, we found that this helped identify the most dynamic producers who attended the fairs, regardless. This measure significantly reduced the costs of the event (2,844,000 FCFA were saved.) and showed the producers that the organization of these fairs could be sustained after the project ended.

VI. Commercialization of Garden Products

As mentioned above, the average price for vegetables was 310 FCFA/kg this year as opposed to 210 FCFA/kg in 2002, due to the production this year of higher-value and less perishable crops such as potatoes, beets, green beans and *Yiriwa Jaba*. The greater organization of producers (particularly with regards to planting schedules) enabled them to avoid glutting the market with the same produce and, thus, significantly contributed to maintaining high prices.

The market also expanded this past year with clients from Ivory Coast coming to villages like Fakola and Kadiana, and clients coming from Bamako to buy, (particularly cabbage), in Ouroun. Senasigi was able to obtain selling space in markets in seven communes: Faradiélé, Bougouni, Sido, Tièmala Banimonotiè, Tièmala Bladié, Zantiébougou, and Kadiana.

New varieties of vegetables were tested in our experimental garden to see how they are affected by parasites, how they react to organic methods of cultivation (using neem and organic manure), how long and well they can be stored, etc. These varieties included *Yiriwa Jaba*, green beans, and potatoes. For example, while only 2% of the green beans were affected by parasites, they only lasted three days after picking.

VII. Partnerships

Partnerships continued with:

- **SLACAER and SLRC** participated in producers' workshops and supported the election of a new board of directors for Jigiya. **APCAM** also participated in the workshops.
- **SC's NGO partners in education** helped with the monitoring of school gardens.
- **KAFO JIGINEW** provided loans to Jigiya so that it could carry out its well-digging services, including the deepening of 14 wells in 7 gardens. **Faso Jigi** played a similar role in Bougouni and Kolondièba.
- **Winrock International** visited our projects in Bougouni and Kolondièba and visited representatives of Senasigi and Jigiya.
- A partnership with APROFA is still being developed regarding new techniques in vegetable processing, with visits by Save the Children to their offices in Sikasso. APROFA is expected to install a gas dryer in Bougouni in the near future.
- Discussions continued with the Morila mine, including two visits from their representatives to our staff and projects in Kolondièba, where they also met four producers and visited the gardens of Djèdièba, Zimpiala I and II, and Bohi.

VIII. Synthesis and Review of Project: 1997-2003

The efforts of the *Commercial Gardening and Wells* project have resulted in **219 functioning gardens which are cultivated by 9,043 producers, of whom 7,415 are women (or 82%).** In these gardens **639 wells** were dug. Demand for the program has grown every year---initially the target was to create 182 gardens---and, indeed, requests from villages still come in with about 100 requests on file. Funds recovered from loans to initial groups were plowed back into financing new gardens. During the life of this project, approximately **4,261 tons of vegetables have been produced**, **worth around 987 million FCFA.** Approximately two thirds of the production or **2,818 tons, were sold, generating revenues of over 665 million FCFA**.

These achievements are due to three main factors:

1. The increasing mastery of agricultural techniques by producers, achieved through continuous training and support from field agents throughout the life of the project;
2. The introduction of new, higher-value varieties; and
3. Improved commercialization opportunities through project activities such as market fairs, producer workshops, and establishing links with buyers and producer associations.

Only 1% of the vegetables were processed. This was due mainly to excellent market opportunities which allowed producers to sell fresh vegetables at good prices. In addition, however, the lack of access to processing equipment such as dryers prevented producers from pursuing processing further. Vegetables such as gombo and onions were processed using traditional sun-drying methods.

The other main impact of the project was in the area of wells. **The project trained 1,232 people in well construction and maintenance**. This cadre of trained technicians, organized into two federations based in Kolondièba and Bougouni, has gone beyond the project scope and now sell their services to other villages for the construction of domestic use wells.

Program Trainings

- for Cultivators

Cultivators received trainings in the following:

- basic botany
- creating a plant nursery
- proper plant density (according to the variety)
- sowing schedule
- thinning/transplanting of seedlings
- treating for disease and insects
- harvesting
- preservation techniques

Trainings occurred in the following cascade: Save the Children field agents organized a first training for 2-3 persons from the garden management committee. They in turn trained all of the cultivators in their village.

- for Well-diggers

The strategy consisted of training four local well-diggers in the construction of wells. These wells use the « Holland brick » which is a very simple and inexpensive technique. It consists of lining the inside of the well with cylindrical bricks which are supported by an iron framework. These trained village well-diggers were responsible

for the digging and the maintenance of the garden wells. Today there are more than **1232 trained masons/well-diggers.**

In addition to the technical trainings received each GVM benefited from numerous trainings from the *Democratic Governance* team on such topics as citizen rights and responsibilities, sound management, internal governance of community organizations, financial sustainability, and women's leadership. Other trainings which occurred during the life of the project were project development and management and negotiating with (funding) partners.

Impact on Producers

The average annual income per producer has increased from 16,000 FCFA in 1997 to 35,735 FCFA by the project's end. According to a study by Sernes in May 2002, average revenues go from 13,000 FCFA to as much as 150,000 FCFA per producer:

Impact of gardening project on producer revenues

Locale	Before the project	After the project	%
Bougouni	50 970	150 000	194
Faraguaran	10 400	46 500	347
Sido	5 220	15 000	187
Garalo	42 430	100 000	136
Kolondièba (town)	14 235	80 000	462
Tousséguela	9 330	40 000	329
Kadiana	5 070	19 000	375
Kebila	4 390	13 000	196
Fakola	12 475	41 000	229
Average	**17 168**	**56 056**	**273**

According to the same study, revenues are used to meet a variety of needs:

- 5 % is used for social events such as marriages;
- 4 % is used to cover household deficits in cereals and foodstuffs;
- 4 % is used for purchasing medicines and health services;
- 3 % is used for schools fees and school supplies;
- 82 % is used to pay back gardening loans;
- 1 % is used for agricultural inputs such as seeds.

The project also had a goal of improving nutrition for producers and their families, the assumption being that greater access to a wider variety of nutritious vegetables would have a positive impact on health. According to the SERNES study, 89% of the persons surveyed stated that their diets had been diversified and their health improved. As a result of these gardens, green vegetables are now available to be consumed throughout the year. In Diambala, Madou Koné, the village *relais* in charge of baby weighing, has observed a steady improvement in children's weight, and fewer childhood illnesses, since the arrival of the project in his village in 1999.

With women contributing more to household expenses, it appears from surveys that both men and women feel that their families live more harmoniously together. According to the SERNES study (see table below), 96% of producers feel that the project has improved social cohesion, as well as diminishing the need for labor migration.

Impact of gardening project on social cohesion and rural migration

Locale	Bougouni	Faragouaran	Sido	Garalo	Kolon-dièba Center	Toussé-guela	Kadiana	Kébila	Fakola	Total
% believing strengthened social cohesion	84	100	95	100	100	100	100	100	100	**98**
% of decrease of rural migration	78	100	80	80	90	90	81	83	80	**85**

Impact on Local Capacity

Part of the program's approach, and its success, were the efforts made to build local capacity, through the establishment and training of market gardening groups, as well as through the establishment of federations and encouragement of exchanges through producer workshops. Senasigi is the federation of 178 market gardening groups, representing over 9,000 members. It is involved in a number of activities such as:

- ⇨ Analysis of requests for new gardens;
- ⇨ Coordinating GVM training and commercialization opportunities;
- ⇨ Procurement of materials for well and garden construction;
- ⇨ Co-signature of loan contracts with GVMs; and
- ⇨ Loan recovery.

Jigiya is the federation of the over 1,000 well diggers that were trained and supported during this program. The federation organizes work groups of well diggers for new constructions and trains well diggers. Its reputation is such that its well-digging services are now requested by villages throughout the zone, well beyond the villages that are part of this program, enabling certain members to earn their living from this work.

The involvement of Senasigi and Jigiya in the procurement of needed material and equipment gave them creater confidence in their capacity and also greater credibility with their clients and communities.

The program also introduced the concept of producers' workshops (*called Kumabulo*): two held separately in Kolondièba and Bougouni in the last two years of the program. These workshops brought together producers to exchange information on agricultural techniques, new varieties, commercialization opportunities, and organizational issues.

Workshops typically were attended by over 100 participants, the majority of them women.

Impact on Commercialization

The main impact of the program was to revitalize a traditional activity, market gardening, for women, thus opening up a window of economic opportunity in a period traditionally known as very slow, the dry season. Providing access to water and to seeds were the catalysts that led to the impressive production figures cited earlier. However, increased production brought new challenges, notably commercialization challenges. In early years, some markets became glutted with the production of numerous market gardens. To meet this challenge, SC and Senasigi initiated a number of successful approaches such as:

Organizing selling points in local markets: SC and Senasigi negotiated with the mayors of a number of communes and obtained permission to set up sales points in their markets. All members of the local GVM agreed to bring their produce to this sales point and agreed on common prices for their produce. Produce left unsold was conferred to a designated Senasigi member, who sold the produce over the remainder of the week. Seven such sales points were created in Sido, Bougouni, Faradjélé, Kololgo, Bladiè, Kolosso, and Kadiana.

Market fairs: As with producers' workshops, market fairs were also spaces for producers to exchange news and views, and discuss production and commercialization challenges. These fairs were also open to the public, serving to publicize the quality of GVM production and new varieties. Partnerships, such as those with communal authorities described above, were often established here, and fairs were attended by buyers from bigger centers like Sikasso and Bamako. The fairs established through the program were the first-of-their-kind in Bougouni and Kolondièba. Demand for market gardens also increased significantly once these fairs were initiated.

Diversification of production: The problems with over-production mentioned above were addressed by encouraging greater diversification, mainly through the introduction of new varieties. Some GVMs opted to specialize in certain vegetables such as onions, cabbage, and lettuce; in other GVMs, individual producers improved crop rotation systems in order to take advantage of off-season sales opportunities.

Partnership

Establishing and nurturing partnerships with a variety of actors has served this program well, and is a key factor in ensuring the sustainability of results. Senasigi for example has been in discussions with the *Union Nationale des Planteurs et Maraîchers de Bamako* with a view to increasing the access that Bougouni and Kolondièba producers have to the Bamako market. Senasigi has also worked with EnterpriseWorks in training GVM members to maintain a supply of *Yiriwa Jaba* seed onions. Local authorities are now on board, with mayors providing space at local markets for sales points, and state officials regularly conferring official recognition to GVMs. Agricultural institutions, such as SLACAER and IER, provide technical support

on an ongoing basis. Finally, interesting partnerships were developed with local traditional water diviners, whose services were requested to determine promising sites for well construction. Results were surprisingly good, with very few wells being dug only to find that they were dry.

Conclusion

The *Commercial Gardens and Wells* project has known a remarkable success in the past five years. **Aside from impressive production and revenue statistics, the most important legacies of the program are well-trained and organized producers, and vibrant partnerships.** These elements will be critical in meeting the challenges that success will bring.

In terms of expansion to new zones, the program has demonstrated that lack of access to water is a key constraint to improving economic conditions in the region of Sikasso. SC's investment in training well diggers, and building their federation, will serve to overcome this constraint in other villages interested in establishing a garden.

In terms of future projects of this nature, we would recommend that a key aspect of this project's success was our approach to training of trainers. Centralized training is both expensive and, more importantly, is a difficult venue for many women to access, as they can be limited in their ability to travel away from their homes. Providing training to key GVM members who then have the responsibility to pass it on to all others at the community level enables a maximum of people (particularly women) to participate in and benefit from the program.